

REMARKS

3-4. 35 U.S.C. § 103. Rejections.

5 4. Claims 29-31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Farel et al (U. S. Pat. No. 4,697,050)(Farel) in view of Stefik et al (U. S. Pat. No. 4,814,552)(Stefik).

10 a) In regard to Claim 29, The Office Action states that "Farel et al (provided in the first office action) teaches a transmitter device (30 in fig. 2) for use with a system for digitizing operative strokes of a drawing implement, the drawing implement having a body, an operative drawing tip, and a rear end opposite the operative drawing tip, the transmitter device comprising a housing having a front end and a rear end, the front end having an aperture, the housing
15 including a removable cover portion for receiving a portion of the body of the drawing implement within the housing, with the operative drawing tip extending through the aperture (Figs. 2-3; summary; col. 2, line 50-col. 3, line 68); a normally closed switch deployed so as to be opened by relative movement between the drawing implement and the housing resulting from the pressure
20 applied to the operative drawing tip (Figs. 2-3; col. 2, line 50 - col. 3, line 68); and a primary spring (42 in Fig. 2) deployed to bias the drawing implement to a forward position in which the normally closed switch is closed (Figs. 2-3; summary; col. 2, line 50 - col. 3, line 68)."

25 The Office Action concedes that "Farel et al does not teach the transmitter device is deployed to initiate transmission of a sequence of pulses in response to opening of the switch."

30 **Farel.** An overview of the computer input device of Farel is seen in the Abstract, as shown:

35 "Write and/or erase means in the form of one or more pens comprise: write and/or erase members for selectively producing visible plottings or effective erasings on a drawing table; means for generating a magnetic field having a frequency corresponding to the selected write or erase function; and electrical supply means permitting the or each pen to be

self-operating. The table comprises detection and computing circuits for working out from signals received on the conductors of the grid, data which is representative of the position of the pen with respect to the table, and data representative of the selected write or erase function."

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While Farel discloses a pen (30) which includes a lead pencil (31), as seen at least in FIG. 2, and in col. 3, lines 50-56, there is no disclosure the the housing further comprises a "removable" cover portion, as suggested by the Office Action.

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As seen at least in Figure 2 of, the writing end of the pen (30) comprises a lead pencil (31), having a lead (33), while the erasing end of the pen (30) comprises a rubber (43) extending from a rubber holder (41).

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While Farel suggests changing of the writing member, on col. 3, lines 14-18, Farel is silent in regard to any structure for changing the writing member. There is no suggestion that the housing be modified to further comprise a "removable cover portion".

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Furthermore, as seen in FIG. 2 of Farel, the transmitter device (30) includes both a writing end, having writing member (31) and pencil lead (33), and an erasing end, having rubber (43) and rubber holder (41), which are separated, by unspecified walls of the housing, from a central region having an oscillation circuit (50), handswitches (38),(39), a charge circuit (52), and a rechargeable

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battery (51). It would therefore take significant modification to the transmitter device (30) of Farel to provide a removable cover portion, as suggested by the Office Action.

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As well, there is no disclosure of a normally "closed" switch deployed so as to be "opened" by relative movement between the drawing implement and the housing resulting from the pressure applied to the operative tip", as suggested by the Office Action. As seen at least in Fig. 2, in col. 2, lines 61-68, Farel clearly describes the use of a normally "open" switch (37).

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In stark contrast to the normally "open" switch (37) of Farel, Applicant has advantageously provided a "normally-closed" switch 68, which is deployed so

as to be **opened** by relative movement of a drawing implement, as disclosed in the Application as filed, at least in Figure 8; on page 8, lines 7-9, and described in detail on page 21, line 16 to page 22, line 6, wherein:

5 "A particular feature of transmitter device 60 is that operative contact of the drawing implement tip against a surface is identified by use of a normally-closed switch 68. The term "normally-closed" switch is used to refer to a switch structure in which movement is detected by the breaking of a circuit normally completed by the switch. In this case, normally-
10 closed switch 68 is deployed so as to be **opened** by relative movement between drawing implement 62 and housing 64 resulting from pressure applied to the operative tip. A primary spring 70 is deployed to bias drawing implement 62 to a forward position in which switch is closed.

15 In contrast to conventional microswitches which switch after a predefined distance of travel, the use of a normally-closed switch provides **immediate detection of contact with a surface** by detecting the onset of relative movement between the drawing implement and the housing."

20 In response to the rejection, to more particularly point out and distinctly claim the invention, Applicant has amended Claim 29, to more specifically claim that the normally-closed switch is "deployed so as to be opened by immediate onset of relative movement between the drawing implement and the housing resulting
25 from pressure applied to the operative drawing tip

Farel is silent in regard to the advantageous use of a normally-closed switch, which allows detection of contact with a surface by detecting the "immediate onset" of relative movement between the drawing implement and the housing.

30 As well, it would take significant modification and undue experimentation to the input device and drawing instrument of Farel to meet the transmitter device of Claim 29, as amended.

35 **Farel in View of Stefik.** The Office Action states that Stefik et al "teaches the ultrasound position input device where the transmitter device is deployed to

initiate transmission of a sequence of pulses in response to opening of the switch (Summary; Figs. 1A,1B; col. 3, lines 22-57; col. 7, lines 1-40)."

5 The Office Action also states that "it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the teaching of Stefik et al into Farel et al for better handling of the drawing implement".

10 Applicant respectfully submits that the device of Farel already includes a different means to determine the position of the pen, *i.e.* a magnetic signal which is sent from an input device (30) and a specialized grid/tablet system which measures conductivity.

15 In contrast to the system of Farel, Stefik discloses an ultrasound input device which transmits an infrared communication signal, as well as an ultrasound signal, to two or more receivers, as seen at least in col. 3, lines 22-38.

20 Applicant respectfully submits that the input and tablet system, as described by Farel, is individually complete, such that there would be no reason to modify the input device of Farel, to initiate the transmission of a sequence of pulses. Farel and Stefik take mutually exclusive paths, to reach different solutions to a similar problem *i.e.* an input device having a magnetic field with a tablet having a conductive grid (as described by Farel) vs. a stylus having remote IR and ultrasound signals which are transmitted to remote receivers (as described by Stefik). Since Farel and Stefik teach away from each other, it would not be
25 logical to combine them.

Furthermore, Applicant respectfully submits that, even in combination, Farel and Stefik fail to disclose a similar structure to the claimed invention.

30 **Stefik.** The stylus and associated remote receivers of Stefik et al are described, at seen least in FIG. 1B, and in col. 3, lines 22-44, wherein:

35 "FIG. 1 is an overview of the system. The stylus 17 is a cylindrical enclosure that contains a writing element, in this case a felt tip marker 21 suitable for writing on a white board. When the marker contacts the board the "write" switch 22 is closed, enabling a transmitter 23 to transmit IR

communication pulses and an ultrasonic location pulse. The IR transmitter can be located anywhere on the stylus 17 but the ultrasonic transducer 25 must be located near the marker tip. In addition, there are three finger activated function switches 18 19 20, the status of these switches being encoded into the IR transmission.

As a minimum there must be two ultrasonic receivers 14 15, or microphones, typically located at the two upper corners of the writing surface, and an IR receiver 16, typically located in one of the microphone enclosures.

The three receivers are connected by wire to input buffers 26 in the receiver logic subsystem, where the serial IR pulses are converted into parallel form at block 27. The circuit of block 28 tests this word, and if valid, issues a Valid Data signal to the range gate logic 10 and starts the system timing clock 29."

Applicant therefore submits that the input device (17) of Stefik is clearly disclosed as having a normally "open" switch, as seen at least in col. 3, lines 25-28, such that "(w)hen the marker contacts the board the write switch (22) is closed, enabling a transmitter (23) to transmit IR communication pulses and a ultrasonic location pulse."

As discussed above, in stark contrast to the "write" switch (22) of Stefik and the switch (37) of Farel, Applicant has advantageously provided a "normally-closed" switch 68, which is deployed so as to be **opened** by relative movement of a drawing implement, as disclosed in the Application as filed, at least in Figure 8; on page 8, lines 7-9, and described in detail on page 21, line 16 to page 22, line 6.

Both Farel and Stefik are silent in regard to the advantageous use of a normally-closed switch, which allows immediate detection of contact with a surface by detecting the "immediate onset of relative movement between the drawing implement and the housing", as cited in Claim 29, as amended.

Furthermore, as discussed above, Applicant has specifically provided a housing further comprising a removable cover portion, "for receiving a portion of the body of a drawing implement, with its operative tip extending through the aperture". Support can be seen in the Application as filed, on Page 8, lines 4-6. As well, Applicant has specifically disclosed an exemplary structure by which the housing may receive a portion of the body of a drawing implement, as seen in Figure 8 of the Application as filed, and as disclosed on page 22, line 15, wherein:

"normally closed switch 68 is deployed in a removable cover portion 64a of housing 64."

Neither Farel nor Stefik disclose a housing which further comprises a removable cover portion for receiving a portion of the body of the drawing implement within the housing.

Applicant respectfully submits that, even in combination, Farel and Stefik fail to meet Claim 29, as amended. Applicant therefore submits that it would take significant modification and undue experimentation to the input devices of Farel and Stefik to meet the transmitter device of Claim 29, as amended.

Therefore, Applicant submits that Claim 29, as amended, overcomes the rejection under 35 U.S.C. § 103(a) as being unpatentable over Farel et al (U. S. Pat. No. 4,697,050) in view of Stefik et al (U. S. Pat. No. 4,814,552).

Applicant submits that, as dependent claim 30 and 31 depend upon Claim 29, and inherently contain all the limitations of Claim 29, they are seen to be patentable as well.

b) Specifically regarding Claims 30-31, the Office Action states that "Farel et al teaches that the transmitter comprises a secondary spring (32 in Fig. 2) deployed to act upon the drawing implement in a rearward direction so as to suspend the drawing implement within the housing (Figs. 2-3; col. 2, line 50 - col. 3, line 68).

Applicant disagrees that Farel discloses a similar spring structure. Farel discloses only one disclosed spring (32) which acts upon writing implement (31), as seen in Figure 2, and described on col. 2, lines 50-68, wherein:

5 "At one first end, said pen 30 comprises a writing member such as an ink-
pen, or as in the illustrated example, a lead pencil 31. Said lead pencil
10 31 is retractable against the restoring force exerted by a spring 32.
Conventionally, the lead pencil 31 can be operationally coupled to
means of propelling the lead 33 forward as said lead gradually wears
out.

15 The pen 30 further comprises, at its first end, an induction coil 35
surrounding the lead 33 and which is connected to an oscillator circuit
50. A switch 37 has a movable contact fixed to the lead-pencil 31 and a
fixed contact carried by the body of pen 30. When using the pen in writing
mode on table 10 via lead 33, the pressure exerted on the lead point
20 during the write operation closes the switch 37 against the restoring force
exerted by spring 32. As indicated hereinafter, switch 37 is inserted in
oscillator circuit 50 so that the closure of switch 37 controls the operation
of said oscillator at a frequency corresponding to a write function."

In contrast to the use of a single spring (32) in Farel, Applicant has disclosed a preferred transmitter device embodiment, as seen in the Application as filed, in Figure 8, and on Page 22, lines 7-14, wherein:

25 "a secondary spring 72, weaker than the primary spring 70, is deployed
to act upon drawing implement 62 in a rearward direction, i.e., tending to
retract the operative point. The opposition and alignment of springs 70
and 72 serves to suspend the drawing implement properly aligned within
30 housing 64 and allows the housing to accommodate different drawing
implements with a range of lengths. At the same time, the stronger
primary spring 70 ensures that switch 68 returns to its closed state
whenever contact force is not applied to the operative tip of the drawing
implement 62."

Applicant has amended independent Claim 29, to claim that the primary spring is deployed to bias the drawing implement in a "forward direction" to a forward position in which said normally-closed switch is closed, and has amended
5 dependent Claim 30, to claim that the transmitter device further comprises a secondary spring weaker than the primary spring, deployed to act upon the drawing implement in a rearward direction opposite to the forward direction, so as to suspend the drawing implement within the housing.

10 Farel clearly fails to disclose a secondary spring weaker than the primary spring, deployed to act upon a drawing implement in a rearward direction opposite to a forward direction, so as to suspend the drawing implement within the housing. As well, there is no suggestion, express or implied, that Farel be
15 modified to meet the claimed invention.

Applicant therefore respectfully submits that Claim 30, as amended, clearly overcomes the rejection under 35 U.S.C. § 103(a) as being unpatentable over the combination of Farel et al (U. S. Pat. No. 4,697,050) in view of Stefik et al (U. S. Pat. No. 4,814,552).

20 c) In regard to Claim 31, the Office Action is silent in regard to the claimed "centering element" associated with the primary spring and providing an abutment surface configured to align the rear end of the drawing implement centrally within said housing.

25 Neither Farel nor Stefik disclose a "centering element associated with the primary spring and providing an abutment surface configured to align the rear end of the drawing implement centrally within said housing. Applicant therefore submits that, even in combination, Farel and Stefik fail to meet Claim 31. As
30 well, there is no suggestion, express or implied, that either Farel or Stefik be modified to meet the claimed invention.

Applicant therefore submits that Claim 31 clearly overcomes the rejection under 35 U.S.C. § 103(a) as being unpatentable over Farel et al in view of Stefik et al.

CONCLUSION

Applicant therefore respectfully submits that Claims 29-31, as amended, overcome the rejections set forth in the prior Office Action. Applicant also
5 submits that the amendments do not introduce new matter into the Application. Based on the foregoing, Applicant considers the invention to be in condition for allowance. Applicant earnestly solicits the Examiner's withdrawal of the rejections set forth in the prior Office Action, such that a Notice of Allowance is forwarded to Applicant, and the present application is therefore allowed to issue
10 as a United States patent.

Respectfully Submitted,



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